

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:	Crooke et al.	Confirmation No.:	5785
Application No.:	09/920,033	Art Unit:	1633
Filed:	August 1, 2001	Examiner:	Epps Ford, Janet L.
For:	Antisense Modulation of Apolipoprotein B Expression	Attorney Docket No.:	12207-009-999

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**STATEMENT UNDER 37 C.F.R. § 3.73(b)**

Genzyme Corporation (hereinafter "Genzyme"), a corporation of the State of Massachusetts, having a place of business at 500 Kendall Street, Cambridge, Massachusetts 02142, states that it is the assignee of the entire right, title, and interest in the above-identified U.S. patent application by virtue of an assignment from the inventor(s). The assignment has been submitted to the United States Patent and Trademark Office for recordation, which a copy thereof is attached.

**REVOCATION OF PREVIOUS AND POWER OF ATTORNEY AND  
NEW POWER OF ATTORNEY BY ASSIGNEE**

Genzyme hereby revokes any and all previous powers of attorney given in the above-identified application and hereby appoints the registered practitioners of JONES DAY at Customer Number **90469** to prosecute this application, to make and to transact all business in the Patent and Trademark Office connected therewith.

**REQUEST FOR CHANGE OF CORRESPONDENCE ADDRESS**

Please send all future correspondence and direct telephone calls to Customer Number  
**90469.**

The undersigned (whose title is supplied below) is authorized to act on behalf of the  
assignee.

**ASSIGNEE: Genzyme Corporation**

Date: 9/1/09 Signature: MKS Shafmaster  
Typed Name: Madge K. Shafmaster  
Position/Title: Senior Vice President and Chief Patent  
Counsel



**UNITED STATES PATENT AND TRADEMARK OFFICE**

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE



AUGUST 05, 2008

\*500511633A\*

PTAS

ISIS PHARMACEUTICALS, INC.  
1896 RUTHERFORD ROAD  
CARLSBAD, CA 92008

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 571-272-3350. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT SERVICES BRANCH, P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 08/04/2008

REEL/FRAME: 021336/0565  
NUMBER OF PAGES: 9

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).  
DOCKET NUMBER: GENZYME ASSIGNMENT

ASSIGNOR:

ISIS PHARMACEUTICALS, INC.

DOC DATE: 07/17/2008

ASSIGNEE:

GENZYME CORPORATION  
500 KENDALL STREET  
CAMBRIDGE, MASSACHUSETTS 02142

SERIAL NUMBER: 09920033

FILING DATE: 08/01/2001

PATENT NUMBER:

ISSUE DATE:

TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

SERIAL NUMBER: 10135985

FILING DATE: 04/30/2002

PATENT NUMBER:

ISSUE DATE:

TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

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SERIAL NUMBER: 10147196 FILING DATE: 05/15/2002  
PATENT NUMBER: 7407943 ISSUE DATE: 08/05/2008  
TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

SERIAL NUMBER: 11969096 FILING DATE: 01/03/2008  
PATENT NUMBER: ISSUE DATE:  
TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

SERIAL NUMBER: 60426234 FILING DATE: 11/13/2002  
PATENT NUMBER: ISSUE DATE:  
TITLE: INHIBITION OF APOB-100 FOR THE TREATMENT OF HYPERLIPIDEMIAS

SERIAL NUMBER: 10712795 FILING DATE: 11/13/2003  
PATENT NUMBER: ISSUE DATE:  
TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

SERIAL NUMBER: 10920612 FILING DATE: 08/17/2004  
PATENT NUMBER: ISSUE DATE:  
TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B-EXPRESSION

SERIAL NUMBER: 10916218 FILING DATE: 08/10/2004  
PATENT NUMBER: ISSUE DATE:  
TITLE: COMPOSITIONS AND METHODS FOR MODULATING LIPOPROTEIN AND CHOLESTEROL LEVELS IN HUMANS

SERIAL NUMBER: 60612831 FILING DATE: 09/23/2004  
PATENT NUMBER: ISSUE DATE:  
TITLE: METHODS FOR MODULATING LIPOPROTEIN AND CHOLESTEROL LEVELS IN HUMANS

SERIAL NUMBER: 11200710 FILING DATE: 08/10/2005  
PATENT NUMBER: ISSUE DATE:  
TITLE: METHODS FOR MODULATING LIPOPROTEIN AND CHOLESTEROL LEVELS IN HUMANS

SERIAL NUMBER: 11573537 FILING DATE:  
PATENT NUMBER: ISSUE DATE:  
TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

SERIAL NUMBER: 60568825 FILING DATE: 05/05/2004  
PATENT NUMBER: ISSUE DATE:  
TITLE: EFFECTS OF APOLIPOPROTEIN B INHIBITION ON GENE EXPRESSION PROFILES IN ANIMALS

SERIAL NUMBER: 11123656 FILING DATE: 05/05/2005  
PATENT NUMBER: ISSUE DATE:  
TITLE: EFFECTS OF APOLIPOPROTEIN B INHIBITION ON GENE EXPRESSION PROFILES IN ANIMALS

SERIAL NUMBER: 60896914 FILING DATE: 03/24/2007  
PATENT NUMBER: ISSUE DATE:  
TITLE: ADMINISTERING OLIGONUCLEOTIDES

SERIAL NUMBER: 60568409 FILING DATE: 05/05/2004  
PATENT NUMBER: ISSUE DATE:  
TITLE: SNPS OF APOLIPOPROTEIN B AND MODULATION OF THEIR EXPRESSION

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SERIAL NUMBER: 11124020 FILING DATE: 05/05/2005  
PATENT NUMBER: ISSUE DATE:  
TITLE: SNPS OF APOLIPOPROTEIN B AND MODULATION OF THEIR EXPRESSION

SERIAL NUMBER: 60600785 FILING DATE: 08/10/2004  
PATENT NUMBER: ISSUE DATE:  
TITLE: METHODS FOR MODULATING LIPOPROTEIN AND CHOLESTEROL LEVELS IN HUMANS

SERIAL NUMBER: FILING DATE: 07/30/2002  
PATENT NUMBER: ISSUE DATE:  
PCT NUMBER: US0224247  
TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

SERIAL NUMBER: FILING DATE: 05/15/2003  
PATENT NUMBER: ISSUE DATE:  
PCT NUMBER: US0315493  
TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

SERIAL NUMBER: FILING DATE: 11/13/2003  
PATENT NUMBER: ISSUE DATE:  
PCT NUMBER: US0336411  
TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

SERIAL NUMBER: 11573537 FILING DATE:  
PATENT NUMBER: ISSUE DATE:  
PCT NUMBER: US0528342  
TITLE: ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

SERIAL NUMBER: FILING DATE: 03/24/2008  
PATENT NUMBER: ISSUE DATE:  
PCT NUMBER: US0858072  
TITLE: ADMINISTERING OLIGONUCLEOTIDES

ASSIGNMENT SERVICES BRANCH  
PUBLIC RECORDS DIVISION

**PATENT ASSIGNMENT**

Electronic Version v1.1  
Stylesheet Version v1.1

**08/04/2008**  
**500611633**

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT

**CONVEYING PARTY DATA**

Name	Execution Date
Isis Pharmaceuticals, Inc.	07/17/2008

**RECEIVING PARTY DATA**

<b>Name:</b>	Genzyme Corporation
<b>Street Address:</b>	500 Kendall Street
<b>City:</b>	Cambridge
<b>State/Country:</b>	MASSACHUSETTS
<b>Postal Code:</b>	02142

**PROPERTY NUMBERS Total: 22**

Property Type	Number
Application Number:	09920033
Application Number:	10135985
Application Number:	10147196
Application Number:	11969096
Application Number:	60426234
Application Number:	10712795
Application Number:	10920612
Application Number:	10916218
Application Number:	60612831
Application Number:	11200710
Application Number:	11573537
Application Number:	60568825
Application Number:	11123656
Application Number:	60896914
Application Number:	60568409

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Application Number:	11124020
Application Number:	60600785
PCT Number:	US0224247
PCT Number:	US0315493
PCT Number:	US0336411
PCT Number:	US0528342
PCT Number:	US0858072

**CORRESPONDENCE DATA**

Fax Number: (760)603-3820

*Correspondence will be sent via US Mail when the fax attempt is unsuccessful.*

Phone: 760-603-2553

Email: leames@isisph.com

Correspondent Name: Isis Pharmaceuticals, Inc.

Address Line 1: 1896 Rutherford Road

Address Line 4: Carlsbad, CALIFORNIA 92008

**ATTORNEY DOCKET NUMBER:**

**GENZYME ASSIGNMENT**

**NAME OF SUBMITTER:**

Laura Eames

**Total Attachments: 7**

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## UNITED STATES PATENT AND TRADEMARK OFFICE

### Facsimile Transmission

**To:**                      **Name:**                      ISIS PHARMACEUTICALS, INC.  
                              **Company:**                      1896 RUTHERFORD ROAD  
                              **Fax Number:**                      17606033820  
                              **Voice Phone:**

**From:**                      **Name:**                      ASSIGNMENT SERVICES BRANCH  
                              **Voice Phone:**                      571-272-3350

37 C.F.R. 1.6 sets forth the types of correspondence that can be communicated to the Patent and Trademark Office via facsimile transmissions. Applicants are advised to use the certificate of facsimile transmission procedures when submitting a reply to a non-final or final Office action by facsimile (37 CFR 1.8(a)).

#### Fax Notes:

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Pg#	Description
1	Cover Page
2	636.TXT
5	Document 1, Batch 1360253

USPTO ASSIGNMENT SYSTEM PROCESSING

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Date and time of transmission: Wednesday, August 06, 2008 1:20:50 PM  
Number of pages including this cover sheet: 06

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EXHIBIT E  
FORM OF PATENT ASSIGNMENT  
**PATENT ASSIGNMENT**

WHEREAS, Isis Pharmaceuticals, Inc. ("Assignor"), a Delaware corporation with an address of 1896 Rutherford Road, Carlsbad, California 92008, is the owner of all rights, title, and interests in and to the patents and patent applications shown on the attached Exhibit 1 (the "Patents"); and

WHEREAS, Genzyme Corporation ("Assignee"), a Massachusetts corporation with an address of 500 Kendall Street, Cambridge, Massachusetts 02142, desires to acquire the entire right, title, and interest in and to the Patents and all the inventions and discoveries disclosed in the Patents (the "Inventions");

NOW THEREFORE, be it known that effective as of July 17, 2008, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby sells, assigns, transfers, and sets over unto Assignee (1) the entire right, title, and interest in all countries throughout the world in and to said Patents and Inventions, including any renewals, revivals, reissues, reexaminations, extensions, continuations, continuations-in-part, and divisions of said Patents and any substitute applications therefor; (2) the entire right to file patent applications ("New Applications") in the name of Assignee or its designee, or in the name of Assignor at Assignee's or its designee's election, on the aforesaid Inventions in all countries of the world; (3) the entire right, title, and interest in and to any patent which issued and may issue on the Inventions in any country, and any renewals, revivals, reissues, reexaminations, and extensions thereof, and any patents of confirmation, registration, and importation of the same; (4) the right to sue and recover for, and the right to profits or damages due or accrued in connection with, any and all past, present, or future infringements of the Patents and Inventions; and (5) the entire right, title, and interest in all convention and treaty rights of all kinds, including without limitation all rights of priority in any country of the world, in and to the above Patents and Inventions;

AND, Assignor hereby authorizes and requests the competent authorities to grant and to issue any and all patents on the Inventions throughout the world to Assignee, its successors, or assigns, whose rights, title, and interests in such patents are the same as would have been held and enjoyed by Assignor had this assignment, sale, and transfer not been made.

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IN WITNESS WHEREOF, the Assignor has caused this Patent Assignment to be duly executed by its officer thereunto duly authorized as of the 17th day of July, 2008.

ISIS PHARMACEUTICALS, INC.

By: 

Name:

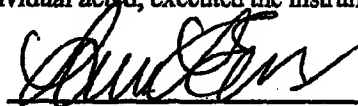
Title:

B Lynne Parshall  
Chief Operating Officer and  
Chief Financial Officer

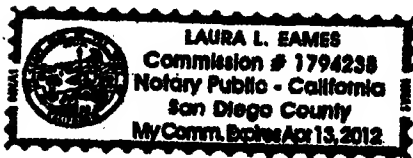
STATE OF California

COUNTY OF San Diego

On the 17 day of July 2008 before me the undersigned, personally appeared  
B. Lynne Parshall, personally known to me or proved to me on the basis of satisfactory  
evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me  
that he executed the same in his capacity, and that by his signature on the instrument, the individual, or  
the person upon behalf of which the individual acted, executed the instrument.



Notary Public



Acknowledgement of Assignee:

GENZYME CORPORATION

By: 

Name: Thomas J. DesRostier  
Title: Senior Vice President, General  
Counsel, Chief Legal Officer

Com.  
STATE OF Massachusetts )

: ss.:  
)

COUNTY OF MIDDLESEX

On the 22 day of July, 2008, before me the undersigned, personally appeared  
Thomas J. DesRosier, personally known to me or proved to me on the basis of satisfactory  
evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me  
that he executed the same in his capacity, and that by his signature on the instrument, the individual, or  
the person upon behalf of which the individual acted, executed the instrument.

Mary Ellen Hamilton  
Notary Public



MARY ELLEN HAMILTON  
Notary Public  
Commonwealth of Massachusetts  
My Commission Expires  
June 11, 2010

**Exhibit 1**

	<u>Isis Docket #</u>	<u>Country/Treaty</u>	<u>Patent/ Application #</u>	<u>Title</u>	<u>Issue Date</u>
	ISPH-0592	United States	09/920,033	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	ISPH-0663	United States	10/135,985	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	ISPH-0688	Patent Cooperation Treaty	PCT/US02/24247	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	ISPH-0688AU	Australia	2002326481	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	ISPH-0688CA	Canada	2,455,228	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	ISPH-0688EP	European Patent Convention	2761201.9	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	ISPH-0688JP	Japan	2003-517078	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	ISPH-0664	United States	10/147,196	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	[ALLOWED]
	ISPH-0664US.C1	United States	11/969,096	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	ISPH-0664WO	Patent Cooperation Treaty	PCT/US03/15493	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216	United States	60/428,234	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216US	United States	10/712,795	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216US.C1	United States	10/920,812	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216US.P1	United States	10/916,218	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216WO	Patent Cooperation Treaty	PCT/US03/036411	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216AU	Australia	2003294281	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216CA	Canada	2,505,801	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216EP	European Patent Convention	3789763.4	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216IN	India	1218/CHENP/2005	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A

	<u>Docket #</u>	<u>Country/Treaty</u>	<u>Patent/ Application #</u>	<u>Title</u>	<u>Issue Date</u>
	DOC-0216IN.D1	India	TBD	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216JP	Japan	2005-507,169	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	DOC-0216ZA	South Africa	2005/03690	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	BIOL0045US.L	United States	60/600,785	METHODS FOR MODULATING LIPOPROTEIN AND CHOLESTEROL LEVELS IN HUMANS	N/A
	BIOL0045US.L2	United States	60/612,831	METHODS FOR MODULATING LIPOPROTEIN AND CHOLESTEROL LEVELS IN HUMANS	N/A
	BIOL0045US	United States	11/200,710	METHODS FOR MODULATING LIPOPROTEIN AND CHOLESTEROL LEVELS IN HUMANS	N/A
	BIOL0045WO	Patent Cooperation Treaty	PCT/US2005/028342	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	BIOL0045USA	United States	11/573,537	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	BIOL0045AU	Australia	2005272912	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	BIOL0045CA	Canada	2,576,860	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	BIOL0045EP	European Patent Convention	5784428.4	ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION	N/A
	BIOL0039US.L2	United States	60/568,825	EFFECTS OF APOLIPOPROTEIN B INHIBITION ON GENE EXPRESSION PROFILES IN ANIMALS	N/A
	BIOL0039US	United States	11/123,656	EFFECTS OF APOLIPOPROTEIN B INHIBITION ON GENE EXPRESSION PROFILES IN ANIMALS	N/A
	BIOL0092US.L	United States	60/896,914	ADMINISTERING OLIGONUCLEOTIDES	N/A
	BIOL0092USWO	United States	PCT/US2008/058072	ADMINISTERING OLIGONUCLEOTIDES	N/A
	BIOL0021US.L	United States	60/568,409	SNPS OF APOLIPOPROTEIN B AND MODULATION OF THEIR EXPRESSION	N/A
	BIOL0021US	United States	11/124,020	SNPS OF APOLIPOPROTEIN B AND MODULATION OF THEIR EXPRESSION	N/A